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Development of Ulva.—The development and conjugation of gametes and also the germination of the zygote are described by SCHILLER²⁴ for both living and fixed materials. Three kinds of gametes are found in *Ulva* and also in *Enteromorpha*: (1) *megagametes* or giant gametes, which do not conjugate and are incapable of development; (2) *parthenogametes*, of medium size, which germinate into normal plants without any conjugation; and (3) *microgametes*, which are smaller than the parthenogametes and which produce new plants only after conjugation. The relation between the nucleus and the protoplasmic mass in the various gametes is believed to be the reason for the differences in behavior.—CHARLES J. CHAMBERLAIN.

Paleobotanical technique.—The veteran and distinguished Swedish paleobotanist NATHORST has contributed remarkably to the technique as well as to the facts of that science. His most recent contribution to technique is in connection with the use of collodion impressions of the surface of fossil plants for microscopic study.²⁵ With the article are published photomicrographs made from such films, illustrating the structure of fossil fern sporangia, the epidermis of the leaves of ferns, and gymnosperms and angiosperms in a fossil condition. Even a *Cupressinoxylon* yields results with this method.—E. C. JEFFREY.

A Paleocene flora.—M. PIERRE MARTY of the Royal Belgian Museum of Natural History has published a memoir²⁶ on the Paleocene flora of Trieu de Leval. Perhaps the most interesting feature of this publication is the discussion of the phylogeny of the important genus *Quercus*, à propos of the new species *Dryophyllum levalense*. The latter has chestnut-like leaves and the author concludes that among the living oaks it has its nearest affinities in those ancestral forms persisting in India, Japan, and the East Indies. The flora as a whole, with the above exception, presents a marked resemblance to that at present existing in northern South America.—E. C. JEFFREY.

Algae and Fungi of Iowa.—BUCHANAN²⁷ has brought together in convenient form, with keys, a list of the algae reported from Iowa, based upon the study of numerous recent collections. The list includes 180 species, and the bibliography of "Iowa Algae" includes nine titles.

The same thing has been done for the Erysiphaceae of Iowa by ANDERSON,²⁸ including of course a complete list of hosts. The recognized species and varieties number 28, involving 35 synonymms; while the hosts reported number 187.—J. M. C.

²⁴ SCHILLER, DR. JOSEF, Beiträge zur Kenntniss der Entwicklung der Gattung *Ulva*. Sitzungs- u. Kaiserl. Acad. Wiss. Wien **116**:1-26. pls. 1, 2. 1907.

²⁵ NATHORST, A. G., Ueber die Anwendung von Kollodiumabdruecken bei der Untersuchung fossiler Pflanzen. Arkiv för Botanik **7**:no. 4. 1907.

²⁶ MARTY, PIERRE, Mém. Musée Roy. d'Hist. Nat. Belgique **5**:1-51. 1908.

²⁷ BUCHANAN, ROBERT EARLE, Notes on the algae of Iowa. Proc. Iowa Acad. Sci. **14**:pp. 40 (repagd). 1908.

²⁸ ANDERSON, J. P., Iowa Erysiphaceae. *Idem* **14**:pp. 34 (repa ed). 1908.